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ABSTRACT

In spring 1992, a study was performed to identify the current use of microcomputers for instruction at community colleges in Kansas. A questionnaire was sent to 20 community colleges, requesting information on subject areas in which computers are used in instruction, types and quantities of computers used, types of operating systems used, use of local area networks, locations of computers, and sources of software. Study findings, based on responses from 18 colleges, included the following: (1) at 18 colleges, microcomputers were being used to teach computer science, data processing, and word processing; (2) 17 colleges taught popular business software, and 15 colleges taught data management programs; (3) other subject areas using computers included basic computer literacy, sciences, reading, arts, and mathematics; (4) 2,307 microcomputers were available for instruction at 14 responding colleges, with the most popular choices being the IBM compatible 386-based PC's and the Apple Macintosh; (5) more powerful 486-based PC's were present in 39% of the colleges, and laptop computers were found in just 28% of the colleges; (6) the most popular operating systems were MS/PC-DOS and the Macintosh systems; (7) the primary location for microcomputers at all colleges was the computer lab, followed by the college library and classrooms; (8) all 18 colleges used commercial software packages, and all but one indicated the use of public domain/shareware types of software; and (9) software written by instructors was used at 12 colleges. Overall, findings indicated that students and educators are becoming more comfortable and proficient in the use of microcomputers. The survey instrument is included. (MAB)

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MICROCOMPUTER USAGE AT THE COMMUNITY COLLEGE LEVEL IN THE STATE OF KANSAS

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Abstract. High capabilities and affordable prices of microcomputers (PCs) have made them an achievable necessity in today's schools. The number of personal computers for instructional use has been increasing rapidly and is expected to continue increasing. This survey was intended to identify the current use of microcomputers (PCs) for instruction at the Community College level in the state of Kansas.

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SAMPLE

During the Spring of 1992, questionnaires were sent to twenty community colleges in Kansas. Eighteen questionnaires were returned, a response rate of ninety percent. Of the total respondents, three colleges did not indicate the quantity of PCs in use; however, they indicated the type of PCs available to their students. Thus, these three responses were not included in the computation of average quantity of PCs in use, but were included in other computations of the study.

SUBJECT AREAS USING MICROCOMPUTERS

The eighteen respondents indicated that microcomputers are being used for the teaching of computer science, data processing, and word processing. Popular business software applications such as spreadsheet was indicated by seventeen colleges, and database management programs were indicated by fifteen colleges. Other teaching areas emphasized included: basic computer literacy, sciences, reading, arts, and mathematics.

The variety of microcomputer uses for instruction at the community college level can be noted by responses in subject areas such as nursing, agriculture, criminal

justice, and cosmetology. Table 1 presents all the teaching areas indicated by the eighteen responses.

TABLE 1 - Subject Areas Using Microcomputers for Instruction (N=18)

Subject Area	Frequency
Computer Science	18
Data Processing	18
Word processing	18
Spreadsheet	17
Database	15
Computer literacy	15
Sciences	13
Reading	12
Arts	12
Mathematics	12
Industrial Technology	10
Social Studies	6
Foreign languages	2
English	2
English-as-a-Second Language	2
Nursing	2
Agriculture	1
Music	1
Psychology	1
Medical Lab Technology	1
Management Education	1
Emergency Medical Training	1
Criminal Justice	1
Cosmetology	1

HARDWARE AVAILABLE FOR INSTRUCTION

A total of 2,307 microcomputers was reported by fourteen colleges as available for instruction (see Table 2). The highest frequency of response was received by the

386-based PC, the Apple Macintosh (both with seventy-eight percent of response frequency). The 286-based PC (also known as PC/AT) had sixty-seven percent.

The traditional Apple computer is yet present in sixty-seven percent of the surveyed colleges. The PC/XT, although outdated and slow, was also reported to be used by sixty-seven percent of the colleges.

TABLE 2 - Hardware Distribution

Microcomputer	Total	N	Average(*)
386-based PCs	596	14	43
286-based PCs	545	12	45
PC/XT	472	11	43
Apple Macintosh	371	14	27
Apple	143	10	14
486-based PCs	141	6	24
Laptops	39	5	8

(*) Rounded values

Powerful machines such as the 486-based PCs, were present in only thirty-nine percent of the colleges. This might be related to the fact that prices are yet high for some colleges, and also to the fact that the 386-based PCs are more affordable machines for instruction at most colleges. Finally, laptops were reported to be present in just twenty-eight percent of the colleges.

OPERATING SYSTEMS

No surprise was found in the operating system used for these microcomputers. All surveyed community colleges reported the use of MS/PC-DOS and Macintosh operating systems. The popular Windows, which is not an operating system by itself, was used by all but one college. The IBM OS/2 was reported by four colleges.

Microcomputer networking was reported to be used by fourteen colleges, seventy-eight percent, while four did not employ any kind of network, twenty-two percent. The operating systems for those colleges using a microcomputer network are presented in Table 4.

TABLE 4 - Network Operating Systems
(N=14)

Operating System	Frequency
Novell Netware	8
Appletalk/Appleshare	5
IBM PC Network	4
Lantastik	3
IBM OS/2 LAN	2
Ethernet	2
Microsoft LAN Manager	1
Banyan Vines	1

MICROCOMPUTERS' LOCATION

The primary location for the microcomputers was reported by all surveyed colleges to be in a computer lab. Microcomputers located in the college library (seventeen responses) and located in classrooms (fifteen responses) were also indicated. Twelve colleges indicated that they have some "mobile PCs" that are moved from classroom to classroom as needed (see Table 5).

TABLE 5 - Microcomputers Location
(N=18)

Location	Frequency
Computer Lab	18
College Library	17
Classrooms	15
Mobile units (moved around)	12
Offices	2
Student Resource Center	1
Outreach locations	1

SOFTWARE USED

The last question in this survey was concerned to the type of software used for instruction. All eighteen colleges reported the use of commercial packages.

All but one college indicated the use of public domain/shareware type of software. Because of the high prices

of commercial packages, even considering educational discounts, the use of shareware is growing. Some good commercial applications, tutorials, and instructional aids can be found in the user-supported market. Besides, shareware may be also a good alternative for developing a low-cost software library.

Software written by instructors was reported by twelve colleges. This may be related to the fact that with the availability of easy-to-use authoring tools, instructors are able to develop their own tutorials and instructional applications without much effort. Software written by the data processing staff was reported by two colleges.

It is interesting to note that one college indicated the use of software/multimedia developed in-house. This is another area that is receiving a great deal of interest by community colleges. We expect that the updated version of our research will show an increasing number of two-year colleges using this kind to technology.

CONCLUSION

This survey revealed that community colleges in the state of Kansas are well equipped in terms of microcomputers available for instruction. Even with the use of some outdated equipment, the presence of modern and powerful IBM-

compatible machines such as the 386 and 486-based PCs and Macintosh machines, were noted in sixteen (89%) of the surveyed community colleges.

Another important point revealed by this survey was related to student access to the microcomputers. All but one college reported that besides a computer lab, microcomputers are available for students' use in the college library. One good way to encourage the student to use and take advantage of the PC's power is to make the equipment available and with easy access.

Finally, the number of subject areas using microcomputers for instruction, other than the traditional Computer Science and business applications, seems to be growing. This may be related to the fact that more easy-to-use instructional applications are frequently being developed and introduced, and also to the fact that educators and students are becoming more comfortable and proficient in the use of microcomputers in the community college setting.

This survey is intended to identify the current use of computers in Community Colleges in the state of Kansas. The information will be used strictly for academic research.

1. In what subject areas are computers being used for instruction in your College? (please check all that apply)

[__] Art
[__] Computer Science
[__] Data Processing
[__] Foreign Languages
[__] Mathematics
[__] Science
[__] Social Studies
[__] Others (please specify) _____

[__] Computer Literacy/Education
[__] Database
[__] English as a Second Language
[__] Industrial Arts
[__] Reading
[__] Spreadsheet
[__] Word Processing

2. What types of computers are being used? (please check all that apply)

[__] Microcomputer (PC)
[__] Minicomputer
[__] Mainframe

3. If microcomputers (PCs) are used, please indicate the quantity by type as follows:

[__] PC/XT
[__] 386 based machines
[__] Apple
[__] Laptops
[__] Other (please specify) _____

[__] PC/AT (286)
[__] 486 based machines
[__] Macintosh

4. If minicomputers are used, please indicate:

Manufacturer: _____ Number of terminals: _____
Manufacturer: _____ Number of terminals: _____

5. Please indicate the types of operating system utilized at your College (please check all that apply):

[__] MS/PC-DOS
[__] Macintosh
[__] Windows(*)
[__] Others (please specify) _____

[__] OS/2
[__] Unix
[__] Xenix

(*) It is not an Op.Sys., but please check if your College use it.

Over please ——>

6. Are any of your PCs connected to a local area network (LAN)?
[__] Yes
[__] No

7. If you answered Yes to the previous question, please indicate the types of LAN operating system utilized at your College (please check all that apply):
[__] IBM PC Network
[__] Banyan Vines
[__] Novell Netware
[__] OS/2 LAN
[__] Microsoft LAN Manager
[__] Appletalk/Appleshare
[__] Other (please specify) _____

8. Where are the computers located in your College? (please check all that apply)
[__] Computer Lab
[__] College library
[__] Kept in regular classrooms where used
[__] Moved around to classrooms where needed
[__] Other (please specify) _____

9. Please check the sources of your software (please check all that apply):
[__] Commercial packages
[__] Software in the public domain
[__] Software written by your instructors
[__] Other (please specify) _____

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